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THE PLANT DISEASE REPORTER

Issued By

THE PLANT DISEASE SURVEY

Division of Mycology and Disease Survey

BUREAU OF PLANT INDUSTRY, SOILS, AND AGRICULTURAL ENGINEERING

AGRICULTURAL RESEARCH ADMINISTRATION

UNITED STATES DEPARTMENT OF AGRICULTURE

SUPPLEMENT 202

SOME NEW AND IMPORTANT PLANT DISEASE OCCURRENCES AND DEVELOPMENTS IN THE UNITED STATES IN 1950

Supplement 202 May 15, 1951

The Plant Disease Reporter is issued as a service to plant pathologists throughout the United States. It contains reports, summaries, observations, and comments submitted voluntarily by qualified observers. These reports often are in the form of suggestions, queries, and opinions, frequently purely tentative, offered for consideration or discussion rather than as matters of established fact. In accepting and publishing this material the Division of Mycology and Disease Survey serves merely as an informational clearing house. It does not assume responsibility for the subject matter.

PLANT DISEASE REPORTER SUPPLEMENT

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THE PLANT DISEASE SURVEY
DIVISION OF MYCOLOGY AND DISEASE SURVEY

Plant Industry Station Beltsville, Maryland

SOME NEW AND IMPORTANT PLANT DISEASE OCCURRENCES AND DEVELOPMENTS IN THE UNITED STATES IN 1950

Compiled by Nellie W. Nance

Plant Disease Reporter
Supplement 202 May 15, 1951

This summary includes the important diseases of 1950 reported up to the present time, compiled for the most part from reports to the Plant Disease Survey and articles in Phytopathology.

The growing season over much of the country favored the development of many crop diseases. As a result of an extremely favorable cool-wet summer tomato late blight attained the most widespread distribution ever recorded in this country, with losses possibly exceeding those suffered from the destructive 1946 outbreak. The disease moved westward, appearing in States where it had not previously been reported. Heavy rains during the season resulted in crop damage caused by a number of diseases not usually of so much importance, e. g., Ascochyta blight of cotton in some Southern States, bacterial blights and anthracnose of beans in Michigan and others that will be noted.

On the other hand relatively light incidence of diseases on small grains in the Southeastern Coastal Plain was attributed to dry weather during the 1949-50 winter and spring season; in spite of the drought, all the major diseases were present in this area to a greater or less extent.

The weighted average temperature for the United States was 52.5° which is 0.7° below the 58-year mean. The precipitation averaged 29.68 inches, or 0.5 of an inch more than the 58-year mean of 29.18 inches. For detailed information on temperature and precipitation for the year see maps on page 71.

During 1950, through the cooperation of plant pathologists, the Plant Disease Survey started a series of Supplements to the Reporter (192, 195) on plant pathological investigations in the United States. The series was planned mainly to bring out the diversity of plant disease problems in this country and to show how the results of these investigations have affected plant disease occurrence and importance.

Papers presented at a symposium on teaching plant pathology during the Pittsburgh meetings of the American Phytopathological Society were published in the April issue of the Reporter. A second symposium on this topic was held at the New York meetings of the Society, and published in the September issue of the Reporter.

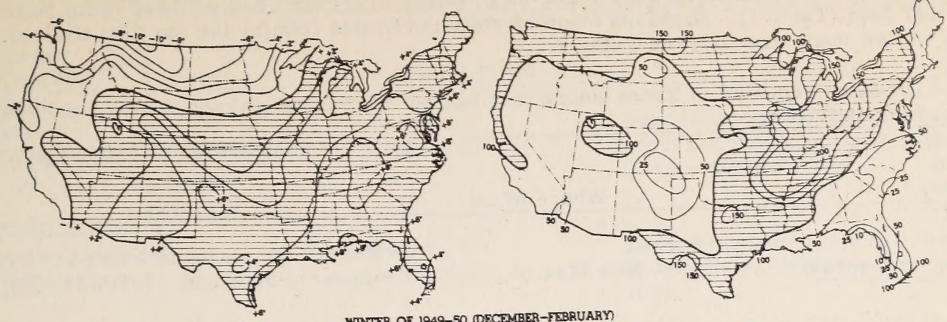
The 7th International Botanical Congress met at Stockholm, Sweden, July 6-20, 1950. The nomenclature section had before it for action 542 proposals involving changes in or additions to the International Rules of Botanical Nomenclature. Action taken at this Congress as it affects mycological nomenclature was published in the November issue of the Reporter.

Parts I, II, and III of the index of plant diseases in the United States compiled by Freeman Weiss were published in 1950 as Spec. Publ. Plant Dis. Surv. No. 1. Part I contains the list of plant diseases occurring in 43 families from Acanthaceae to Compositae, Part II deals with 31 families from Convolvulaceae to Gnetaceae, and Part III contains the Gramineae. The index is essentially an annotated host list, the members of each family being listed alphabetically under the Latin binomial, together with the common names and distribution. Under each is given a list of the diseases and their distribution.

TEMPERATURE AND PRECIPITATION

Departure of Mean Temperature from Normal

Percentage of Normal Precipitation



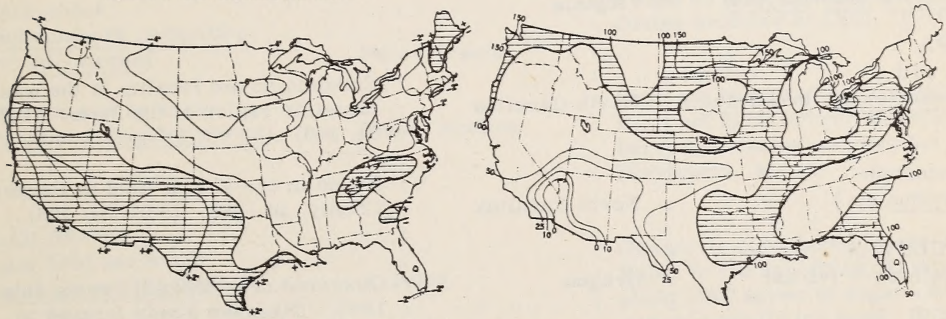
WINTER OF 1949–50 (DECEMBER–FEBRUARY)

Shaded Areas Normal or Above

Shaded Areas Normal or Above

Departure of Mean Temperature from Normal

Percentage of Normal Precipitation



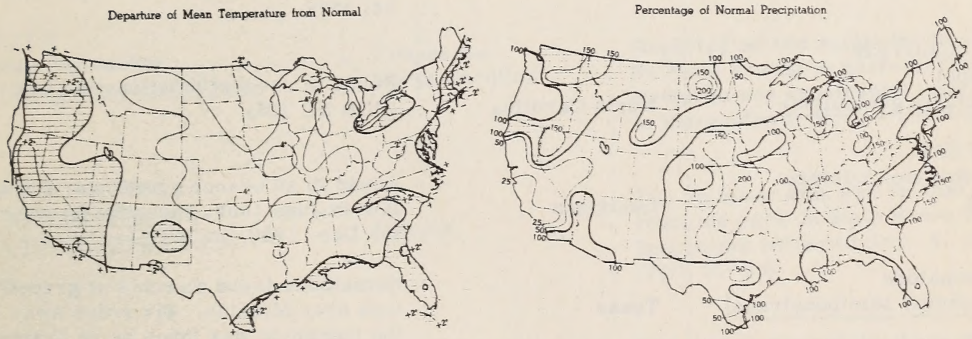
SPRING OF 1950 (MARCH–MAY)

Shaded Areas Normal or Above

Shaded Areas Normal or Above

Departure of Mean Temperature from Normal

Percentage of Normal Precipitation



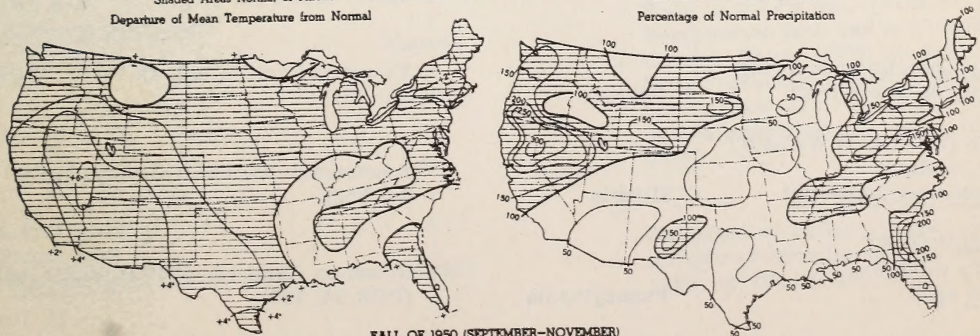
SUMMER OF 1950 (JUNE–AUGUST)

Shaded Areas Normal or Above

Shaded Areas Normal or Above

Departure of Mean Temperature from Normal

Percentage of Normal Precipitation



FALL OF 1950 (SEPTEMBER–NOVEMBER)

Shaded Areas Normal or Above

Shaded Areas Normal or Above

(From Weekly Weather and Crop Bulletin National Summary, Volume 37, 1950.)

During the year 26 diseases were reported in States where they had not been found before on a particular host (Table 1). Diseases found or reported in this country for the first time in 1950 or found on new hosts are listed in Table 2.

Table 1. Diseases reported in States where they had not been found or reported on a particular host until 1950.

Host Disease (Cause)	Where found	Remarks
BARLEY		
Net blotch (Pyrenophora teres)	New Mexico	Most of the plants in a five-acre field appeared diseased. (PDR 35: 168)
CORN		
Gray leaf spot (Cercospora zeae-maydis)	Virginia	(PDR 34: 394)
ALFALFA		
Alfalfa wilt (Corynebacterium insidiosum)	North Carolina	Endemic in one locality in the western mountain region of the State. (PDR 34: 205)
Stem nematode (Ditylenchus sp.)	North Carolina	Found in one alfalfa field in Harnett County, in 1949. (PDR 34: 205)
ALSIKE CLOVER		
Aster yellows ? (virus)	Oregon	Observed near Merrill during July 1950. Diseased plants formed no seeds, thus being a total loss. (PDR 34: 322)
LADINO CLOVER		
Leaf spot (Curvularia geniculata)	North Carolina	Found in several locations in 1949. (PDR 34: 205)
CITRUS SPP.		
Quick decline, tristeza (virus)	Louisiana	Found in an orange grove near Buras late in June 1950. (Florida Grower for Dec. 1950, p. 12)
Root nematode (Tylenchulus semipenetrans)	Texas	Nematodes found on roots of grapefruit tree near Mission. Six miles away the nematode was found on an orange tree. (PDR 34: 269)
PEACH		
Diplodia infection occurring naturally on peach fruit	Georgia	Found at Fort Valley, in 1950. (PDR 35: 221)
PERSIAN (ENGLISH) WALNUT		
Bacterial blight (Xanthomonas juglandis)	Illinois	Reported in Tazewell County. (PDR 34: 352)
AFRICAN VIOLET		
Powdery mildew (Oidium sp.)	Pennsylvania	Found on April 19, 1950 in Pittsburgh. (PDR 34: 197)
CAMELLIA		
Flower blight (Sclerotinia camelliae)	North Carolina	Fungus found at Winnabow. (PDR 34: 196)
	Louisiana	Found in Shreveport. (PDR 34: 188)

Table 1. (Continued)

Host Disease (Cause)	Where found	Remarks
ROSE		
Rust (Phragmidium americanum?)	Louisiana	Reported from Tensas Parish. First occurrence of rose rust in the Deep South. (PDR 34: 197)
SNAPDRAGON		
Powdery mildew (Oidium sp.)	Washington California	Caused economic damage to greenhouse-grown snapgragons. (PDR 34: 183)
TOBACCO		
Black shank (Phytophthora parasitica var. nicotianae)	Pennsylvania	Found on a farm in Lancaster County during summer of 1950. (PDR 35: 56)
Stem rot and barn rot (Pythium aphanidermatum)	South Carolina	Stem rot occurred on transplants. Barn rot most severe on bottom leaves harvested during wet weather. (Phytopath. 41: 17)
SUGAR BEET		
Sugar beet nematode (Heterodera schachtii)	Arizona	Generally distributed in one 34-acre field, in the Salt River Valley where about 1000 acres of sugar beets are grown annually for seed. (PDR 35: 173)
MAPLE		
Bleeding canker (Phytophthora cactorum)	Tennessee North Carolina	Reported on red maple in Cherokee National Forest in eastern Tenn. Found on one ornamental sugar maple in Morgantown, N. C. (PDR 35: 119)
AMERICAN ELM		
Dutch elm disease (Ceratostomella ulmi)	Illinois	The diseased elm was located in a roadside park on State Route 16. Specimens collected Aug. 3, 1950. (PDR 35: 56)
OAK		
Oak wilt (Chalara quercina)	Pennsylvania	The distribution of the disease in the State is not known. (PDR 34: 291)
	Kansas	Reported on post oak in Douglas County, Kans. (PDR 35: 119)
	Illinois	Found naturally infecting swamp white oak in Cook Co., Ill. First report of natural infection in woods. (PDR 35: 173)
SLASH PINE		
Cone rust (Cronartium strobilinum)	Georgia	Collected on cones of slash pine in vicinity of Pine Harbor during June of 1950. (PDR 34: 349)
SNOWBALL		
Spot anthracnose (Sphaceloma viburni)	Maryland	Infections found in Worcester and Somerset Counties. (PDR 34: 350)

Table 1. (Continued)

Host Disease (Cause)	Where found	Remarks
POTATO		
Pink rot (Phytophthora erythroseptica)	New York	Generally associated with excessively high moisture conditions. (PDR 35: 55)
Unmottled curly dwarf (virus)	New Hampshire	Reported on B 76-43 plants (U. S. D. A. variety), 1% showed symptoms. (PDR 34: 322)
SWEETPOTATO		
Internal cork (virus)	Oklahoma	Found in fall of 1949. In Jan. 1950 it was found in 11 out of 12 storage houses visited in widely scattered locations. (PDR 35: 227)
	California	Found in varietal plots at Davis and Shafter and in an experimental planting of Bunch Porto Rico at Manteca. (PDR 35: 230)
TOMATO		
Late blight (Phytophthora infestans)	Kansas	Found on fruits at Concordia, Cloud County, in Nov. 1950. (PDR 35: 120)

Table 2. Diseases found or reported in this country for the first time in 1950 = *; diseases found on new hosts = **.

Host Disease (Cause)	Where found	Remarks
BLUE LUPINE		
Powdery mildew ** (Microsphaera diffusa)	Georgia	Found during December in experimental plots in the greenhouse. (PDR 35: 221)
DELPHINIUM	Connecticut	No previous report of this disease in
Crown rot *	New York	the U. S. or abroad. New species
(Diplodina delphinii)	New Jersey	(Phytopath. 40: 615)
LUNARIA ANNUA		
Leaf spot ** (Alternaria brassicae)	California	Found in 1941 and reported in 1950 (PDR 34: 406)
RIBES AUREUM	New Mexico	Found in a small ornamental planting
Root rot **	Wyoming	near Mesilla Park. Additional un-
Fomes ribis	California	reported specimens found in Mycological Collections as follows: on R. aureum in Wyoming in 1917, on R. glutinosum, another ornamental species, in California in 1920. (PDR 34: 212)
TUBEROSE		
Botrytis spot and blight ** (Botrytis elliptica)	California	Found in commercial plantings grown for cut flowers and bulbs (PDR 35: 45)

Table 2. (Continued)

Host disease (Cause)	Where found	Remarks
PEANUT, COTTON, SOYBEAN		
Sting nematode ** (Belonolaimus gracilis)	Virginia	Survey indicated that sting nematode can cause serious damage to peanut crops. (Phytopath. 41: 29)
PEPPERMINT		
Root rot ** Typhula sp. (? T. itoana)	Oregon	Noted in Grand Island in early March. (PDR 34: 322)
CHINESE CHESTNUT		
Oak wilt ** Chalara quercina	Missouri	Isolated from five Chinese chestnut trees. (PDR 34: 291; 35: 28)
PLUM (Prunus angustifolia)		
Anthracnose ** (Glomerella cingulata)	Georgia	Reported in June 1950. (PDR 34: 352)

DISEASES OF CEREAL CROPS

Investigations carried out at the Wisconsin Agricultural Experiment Station in cooperation with the Division of Cereal Crops and Diseases on anthracnose (Colletotrichum graminicola) showed that the fungus is a high-temperature organism with optimal mycelial development at 28° C. Temperature had little effect upon the final severity of seedling disease of Sudan grass, but relatively low temperatures reduced seedling disease in rye. Host specificity was observed among different isolates. Isolates from the several hosts showed a wide range in pathogenicity under identical conditions. (Bruehl and Dickson. Tech. Bull. U. S. Dept. Agr. 1,005, 37 pp. 1950).

James A. Lyle reported incidence of diseases of small grains in Alabama in 1949-1950. Surveys of grain fields and of small grain variety tests were made at intervals during the fall, winter, and spring. He stated that in general oat diseases are much more prevalent in southern and central Alabama than in northern Alabama because of more favorable weather conditions for the growth of the pathogenic organisms during the growing season of the host. No variety of oats, at any of the different locations in the State, showed good resistance to any of the major diseases. Wheat as a winter grain crop is of minor importance in the State. Comparative susceptibility was shown of the different varieties to the three most serious diseases, i.e., powdery mildew (Erysiphe graminis tritici), leaf rust (Puccinia rubigo-vera tritici), and Septoria leaf blotch, at four different locations. (PDR 34: 318).

H. H. McKinney, from studies on pigment disorders in small grains, concluded that apart from the pigment disorders induced by parasites and possibly by viruses not yet discovered, cold injury to the leaves and nitrogen deficiency accounted for most of the trouble. Often low temperatures affect the plastids in certain varieties, and the leaf tissue gradually turns pale green and may die. Most of the anthocyanin type of pigmentation, especially common in certain oat varieties, appears to follow abnormally low temperatures, or excessive soil moisture conditions, or both. (PDR 34: 151).

R. W. Leukel summarized the results of seed treatment tests on oats and barley in 1950. Certain materials were tested with regard to their effect on germination and their effectiveness in controlling the loose and covered smuts of oats and the stripe-disease of barley. (PDR 34: 314).

J. E. Machacek summarized data on the effectiveness of different seed-treatment fungicides in the control of certain seed-borne diseases of wheat, oats, barley, and flax in cooperative experiments at 15 stations in Canada and 7 in the United States in 1950. (PDR 35: 146).

In Illinois, oat and wheat seed treatment experiments in 1950 were reported by Koehler and Bever. Special attention was given to dosage, storage before planting, and thoroughness of mixing. (PDR 34: 259).

AVENA SATIVA. OATS: In reporting on the occurrence and importance of oat diseases in Arkansas in the 1949-50 season, H. R. Rosen stated that Puccinia coronata, crown rust, was by far more common in 1950 than it had been during the past few years, causing considerable reduction in yield. Helminthosporium avenae, leaf spot, continued to be one of the most common of all oat diseases. (PDR 35: 149).

Erysiphe graminis, powdery mildew, has increased in North Carolina in the last few years. Helminthosporium avenae, leaf blotch, was the most serious disease on oats this past season in North Carolina. It was observed in fields throughout the State. A 10 percent reduction in grain yield was estimated. H. victoriae, Victoria blight, was first observed in North Carolina in the spring of 1949, in Hyde County, where it was present in only a few fields. The 1950 survey showed the disease not so severe as in 1949. Puccinia coronata, crown rust, was very prevalent in the fall in eastern North Carolina. Some fields were so badly damaged that the oats were plowed under. The 1950 spring crown rust infection was very light. (PDR 34: 392).

Puccinia graminis avenae race 7, oat stem rust, previously restricted principally to barberry areas, attacks Mindo, Bonda, Clinton, and other varieties of oats deriving their stem-rust resistance from White Tartar. It was found from Florida to Texas and northward to the Canadian boundary in 1950 and comprised almost one-half of the isolates in the United States. It is possible that this race can now maintain itself independently of barberries. (Stakman and Loegering. Phytopath. 41: 33).

HORDEUM VULGARE. BARLEY: Erysiphe graminis, powdery mildew, was very prevalent in the fall, but was not so severe in the spring in North Carolina. It was estimated that the average yield for the State was reduced about 5 percent. Puccinia hordei, leaf rust, which was present over the entire State, reduced the yield about 10 percent. Rhynchosporium secalis, scald, was less severe in 1950 than in 1949, but was found in every section of the State. The average loss was estimated at 2 percent. Ustilago nuda, loose smut, was present in most fields throughout the State, in trace amounts to 10 percent. (Moseman and Hebert. PDR 34: 392).

False-stripe (virus). H. H. McKinney reported that leaves of Chevron and Mars barley, showing false stripe in the nursery at St. Paul, Minnesota were sent to him in July and August 1950. Tests showed this virus to be seed-borne. Preliminary studies indicated that this virus probably is distinct from any previously described. The circumstantial evidence suggested rather strongly that the false-stripe and the chlorotic markings in the Chevalier barley plants collected by A. G. Johnson in 1913 were induced by this virus. (PDR 35: 48).

SORGHUM VULGARE. SORGHUM: Results of sorghum seed treatment tests at Beltsville, Maryland in 1950 were reported by R. W. Leukel (PDR 34: 342).

TRITICUM AESTIVUM. WHEAT: Ophiobolus graminis, take-all, caused slight to moderate damage in the southeastern quarter of Nebraska, according to J. E. Livingston. Even so, it was the most serious outbreak of take-all that he had seen in the State. A different type of root rot was found in many fields in the panhandle of western Nebraska resulting in a 10 to 20 percent reduction in stand. The cause of this root rot was not determined. Field observations over a period of years indicated that avoiding early planting and planting in a good firm seed bed are very desirable in avoiding this disease. (PDR 34: 232).

Puccinia spp., rust. According to Tervet and Cassell the development of small cyclone separators and their dual use both as collectors and disseminators of rust spores has facilitated the handling of uredospores and thus made the task of rust race identification easier. They described some methods that have proved successful in studies with cereal rusts. (Phytopath. 41: 286).

Puccinia graminis tritici race 15B, the most virulent race of stem rust ever found in North America and previously found almost exclusively near barberries, spread and multiplied spectacularly in 1950. It was found in 12 States from Texas to northernmost United States and comprised nearly one-fourth of all isolates. It attacked all hitherto stem-rust-resistant commercial varieties of durum and bread wheat and caused heavy damage to durums in northern Minnesota and North Dakota. It is possible that this dangerous race can now maintain itself independently of barberries. (Stakman and Loegering. Phytopath. 41: 33). In North Dakota the stem rust epidemic of 1950 was the most destructive since 1935 and losses were severe, according to W. E. Brentzel. Surveys showed that rust was widespread and in epidemic form in the eastern portion of the State. In the hard wheats the severity of infection ranged from a trace in the western part to as much as 80 to 90 percent in the eastern portion. The infection was particularly severe in the Red River Valley. Durum fields were damaged more severely

than the hard wheats, owing to the fact that they were somewhat later in maturing and are grown in the northeastern part of the State where the season is later. Red durum (D-5), notoriously known for its rust resistance and a variety which has resisted rust in all epidemics since 1914, rusted severely this year in North Dakota. The cause of the 1950 epidemic was two-fold. Seeding throughout the eastern part of the State was the latest on record, because of floods and a very late spring season. Harvesting was almost as late as seeding. The cool temperatures between these times were favorable for rust propagation. Perhaps the most important cause was the appearance of a race of rust uncommon or not heretofore known to occur in the Red River Valley. (PDR 34: 340)

Puccinia rubigo-vera tritici, leaf rust, was starting to build up on April 28, 1950, in Franklin County. According to R. S. Kirby this is one of the earliest dates in the spring that leaf rust has been observed in Pennsylvania. (PDR 34: 198). Moseman and Hebert reported that leaf rust caused an estimated loss of 10 percent in North Carolina. (PDR 34: 392)

Ustilago tritici, loose smut, was present in approximately 50 percent of the fields in Nebraska with as many as 5 percent of the heads affected in some fields. (J. E. Livingston, PDR 34: 232)

Mosaic (virus). J. R. Wallin reported on results of a survey for wheat mosaic in Kansas, Nebraska and Iowa. In Iowa a thirty-acre field showed 100 percent of the plants stunted, exhibiting mosaic symptoms. Some mosaic was found in Kansas and Nebraska. (PDR 34: 211)

ZEA MAYS. CORN: In Virginia, Curtis W. Roane reported that corn diseases were destructive in 1950 because of weather conditions favorable for their development and because of the general use of highly susceptible hybrids. Conditions were especially favorable for stalk rot development. It was estimated that stalk and ear rots would cost Virginia farmers 15 to 20 percent of their crop this season. (PDR 34: 394)

Bacterium stewartii, bacterial wilt or Stewart's disease, was reported on sweet corn in Connecticut, and in New York on Long Island and in the Hudson Valley as far north as Columbia County. Chupp stated that it had been shown many times that if the combined average temperatures of December, January, and February are less than 100° F., the disease will not be present, but if this sum is above 100°, and especially when it is above for two successive years, the disease may be important. (Letters to PDS Warning Service). In Illinois G. H. Boewe forecasted the prospects of bacterial wilt of corn for 1950. He stated that it would probably occur much farther north and be much more destructive in Illinois than it was in the summer of 1949. This forecast, the second to be made for Illinois, was based on the close relationship that appears to exist between the amount of disease which develops during the summer and the temperature of the preceding winter. In 1949, the development of both phases of the disease on sweet corn coincided very closely with the prediction made in the first forecast. Observations indicated that the leaf blight phase of the disease in field corn also can be predicted on the basis of winter temperatures. In many corn fields leaf blight was severe to very destructive in the south half of the State and light to moderately severe in north central Illinois in 1949. (PDR 34 (5): 155)

Helminthosporium turcicum, leaf blight, in 1950 occurred generally over Iowa, according to Vestal and Semeniuk. Leaf infection varied from a trace to 100 percent. Estimated yield reductions varied from a trace to 20 percent, the average being 1 percent. (PDR 35: 212) A preliminary report of results from some fungicide spray trials for control of Helminthosporium leaf blight of sweet corn was sent in by Warren N. Stoner. Some materials used in this experiment gave promise of effectiveness but further investigation seemed to be needed. (PDR 34: 312)

Puccinia sorghi, rust, according to J. R. Wallin, has been known for many years in this country, but without much damage in the corn belt. The disease became epiphytotic in 1950 in the North Central States. He quoted reports on the occurrence and severity of the rust in these States during 1950. In eight of the ten States reporting the 1950 weather conditions were mentioned as being unusually favorable to rust development. (PDR 35: 207)

DISEASES OF FORAGE AND COVER CROPS

CALAMAGROSTIS CANADENSIS. BLUEJOINT: S. Goto and J. W. Gibler described a nematode leaf gall found on bluejoint near St. Paul, Minnesota, in 1949. No spread from the original spot of infestation was observed in 1950. (PDR 35: 215)

CROTALARIA SPECTABILIS. SHOWY CROTALARIA: Charles M. Gates reported the presence of mosaic of C. spectabilis in southern Florida, as well as a modification of the mosaic disease designated as "little-leaf" disease (PDR 34: 203)

CYAMOPSIS TETRAGONOLOBA. GUAR: In Georgia during the summer of 1950, nursery plantings of guar were severely damaged by Alternaria leaf spot (Alternaria cucumerina) and white mold (Sclerotium rolfsii), according to E. S. Luttrell, who described the diseases. Observations indicated that both of these diseases may prove to be important factors in limiting the production of guar in Georgia as a green manure crop, or especially, as a seed crop. None of the 55 strains of guar, recent introductions from India, showed a satisfactory degree of resistance to either disease. (PDR 35: 166)

ERODIUM SPP. FILAREE: Red leaf (virus). Norman W. Frazier pointed out the symptoms of a virus disease of the yellows type that is of common occurrence on Erodium spp. in California. The virus was transmitted by three species of aphids. It was not transmitted by means of juice inoculation. (Phytopath. 41: 221)

FESTUCA SPP. FESCUE: Helminthosporium spp. K. W. Kreitlow and others reported the susceptibility of tall and meadow fescues to Helminthosporium infection. Data presented demonstrated that none of the strains of tall fescue tested was resistant to H. dictyoides. Differences in reaction to H. dictyoides among plants of meadow and tall fescues in both field and greenhouse suggested the possibility of isolating plants resistant to the disease. (PDR 34: 189)

H. dictyoides was found in a field of Kentucky 31 fescue in January near Baton Rouge, Louisiana. By mid-February following grazing the disease appeared to be less severe. Specimens received from other locations in Louisiana indicated that the disease is widespread on fescue. (J. G. Atkins. PDR 34: 157)

FESTUCA ELATIOR VAR. ARUNDINACEA. TALL FESCUE GRASS: In Georgia, diseases occurring on tall fescue grass were reported by E. S. Luttrell. Helminthosporium dictyoides, net blotch, occurred throughout the State and reached its peak in the late winter and early spring of 1949-50. Estimates of damage varied from a trace to 5 percent. Rhizoctonia leaf blotch (R. solani) was a serious disease on fescue throughout Georgia during the summer of 1949. During the drier summer of 1950 it was much less abundant. The highest estimate of damage was 5 percent. (PDR 35: 83)

LUPINUS ANGUSTIFOLIUS. BLUE LUPINE: Ascochyta gossypii, canker, was reported on blue lupine in Georgia by J. L. Weimer. This disease appeared to be limited largely to lupines in fields in which cotton had been growing. (PDR 35: 81)

Virus diseases. Weimer also reported that two virus diseases of blue lupine, seldom observed previously, were present in epiphytotic form in lupine fields at two locations in Georgia in the spring of 1949. In 1950 both diseases were present in numerous fields, but usually only an occasional plant was infected. A few observations and data were given. (PDR 34: 376)

MEDICAGO SATIVA. ALFALFA: In Virginia during the period April 11 to 13, alfalfa and clover fields were visited in six counties by Fenne and others. In most fields visited, injuries were noted on the roots of alfalfa plants, caused either by insects or Rhizoctonia spp. Considerable downy mildew (Peronospora trifoliorum) was observed. Blackstem (Ascochyta imperfecta) was abundant on the plants, causing both leaf spots and withering of the shoots, due to girdling. The stem nematode (Ditylenchus spp.) disease has continued to develop in Henrico County, where it was found in 1948 and 1949. Stemphylium botryosum, attacking both leaves and stems, is one of the big problems in growing alfalfa, according to Henderson and Smith. (PDR 34: 204)

Colletotrichum trifolii, anthracnose, in the wet summer of 1950 became widespread and locally destructive in the alfalfa nursery at Madison, Wisconsin according to F. R. Jones. In both the greenhouse and nursery certain selfed lines and crosses appeared to be far more susceptible than others. (PDR 34: 344)

Corynebacterium insidiosum, wilt. Valleau, in Kentucky, reported that specimens of alfalfa dying from wilt were received from Nicholas County. According to the report the majority of the plants were affected. This is the second report of alfalfa wilt in Kentucky in several years. (PDR 34: 214)

Diplodia gossypina is one of the causes of crown rot of alfalfa in Arizona, according to Bailey Sleeth. (PDR 35: 50)

Witches' broom (virus) disease is becoming an economic menace in the important Yuma Mesa alfalfa area of Arizona, according to Bailey Sleeth. In the Yuma Mesa 90 percent of the land is in alfalfa production. (PDR 35: 77)

Yellows. Increased incidence of alfalfa yellows in Virginia in 1950 was associated with unusual abundance of the three-cornered alfalfa hopper, according to S. B. Fenne and J. O. Rowell. The last outbreak in this State occurred in the summer of 1941. The insect is noticed especially following mild winters, such as were experienced for the past two years. (PDR 34: 344)

MELILOTUS SPP. SWEETCLOVER: Phytophthora cactorum, root rot, as reported by J. W. Gerdemann, is responsible for the loss of many sweetclover stands. In some sections of Illinois the growing of sweetclover has been discontinued because of this disease. Experiments in Illinois showed that occurrence of root rot is not affected by fertilizers added to the soil. It appears that the most promising control for this disease may be the development of resistant varieties. (PDR 34: 261)

SETARIA VIRIDIS. In tests made on common "weed grasses", it appeared probable that S. viridis in South Dakota provided a method of perpetuating wheat mosaic viruses between harvest and the emergence of volunteer and fall-sown wheat, by acting as a carry-over host. Winter wheat thus infected in the fall can harbor the viruses over winter. (John T. Slykhuis PDR 35: 221)

SOJA MAX. SOYBEAN: In Virginia, data presented by S. B. Fenne and W. C. White indicated that soybean seed treatment with Arasan increased germination. These results raised some questions for certification. Should such seed be eligible for certification, if percentage of germination meets certification requirements after treatment? (PDR 34: 206)
T. J. Nugent and others reported results of combined seed treatment and seed inoculation studies with soybeans in Virginia. The use of Arasan seed treatment significantly increased the stand counts of the soybeans in the test. Root nodulation was heavier on plants grown from seed which had been inoculated with Nitragin just prior to planting. (PDR 35: 82)
In North Carolina, during August 1950, leaf spot (Sclerotium rolfsii) was found on soybean leaves, and reported by Lehman and others. (PDR 35: 187)

TRIFOLIUM INCARNATUM. CRIMSON CLOVER: In Virginia, during the period of April 11 to 13, alfalfa and clover fields were visited in six counties by Fenne and others. Many fields of crimson clover were observed in the eastern part of the State, severely attacked by Sclerotinia trifoliorum. Three weeks of dry weather checked the development of stem rot and the severe losses expected did not occur generally. (PDR 34: 204)
Sclerotinia trifoliorum, crown rot, according to W. D. Valleau was severe on crimson clover over the State of Kentucky, probably because of a warm open winter with considerable rainfall. (PDR 34: 197)

TRIFOLIUM REPENS. LADINO CLOVER: Curvularia trifolii, leaf blight, was reported in North Carolina by S. G. Lehman. It developed rapidly during wet warm periods in fall, winter and spring. In areas along roadways or fences where the foliage is allowed to stand for long periods 20 to 25 percent of the leaves were diseased and a high proportion of them dead. (PDR 35: 79)

VICIA VILLOSA. HAIRY VETCH: Ascochyta sp., black stem, was present in all fields of hairy vetch observed in Kentucky. The vetch died out nearly completely in many fields. The winter was warm and wet, which undoubtedly contributed to the severity of the disease. (W. D. Valleau, PDR 34: 213)
Ascochyta pisi, blight, and Colletotrichum villosum, anthracnose, were reported by J. Lewis Allison and others as being destructive to the 1950 vetch seed crop in Tennessee. Rapid vegetative growth during the unusually warm winter months followed by a period of high rainfall during May and the first part of June contributed to the build up of the epiphytotics in 1950. (PDR 34: 321)

DISEASES OF FRUIT CROPS

The zinc deficiency situation in the western United States was reviewed by Wann and Thorne. The condition was present to a serious extent in all the major fruit- and nut-producing areas, and the cost of maintaining the crops in a healthy condition, usually by means of a dormant spray of zinc sulfate, was of economic significance, amounting in California to nearly $1,500,000 per annum. They pointed out that there is evidence of a gradual depletion of the available zinc in the

deeper soil strata under orchard trees, which is likely to lead to a considerable extension in the distribution of the deficiency in years to come. (Sci. Mon., N.Y. 70: 180-184)

CITRUS SPP. Cold spot -- a chlorosis of citrus leaves resembling virus ringspot -- has been described by L. Carl Knorr from Florida on orange leaves. That these chlorotic ringspots are caused by cold appears to be circumstantially true, but by what mechanism they arise still remains a question. (Citrus Magazine 12: 29-30, June 1950)

CITRUS AURANTIFOLIA. LIME: Results of a survey made to determine the amounts of lime bark disease and presumed virus disease in Dade County, Florida, and to attempt to correlate the presence of the virus disease to the severity of the Diplodia and Diaporthe bark rots, were reported by Gates and Soule. (PDR 34: 397)

CITRUS PARADISI X C. RETICULATA. TANGELO: J. F. L. Childs reported that a disease designated as "cachexia" disease, of unknown cause but resembling a virus disease, threatens the cultivation of the Orlando tangelo variety in Florida. The symptoms are described and the causal relationships discussed. (PDR 34: 295)

FRAGARIA SPP. STRAWBERRY: D. H. Scott and others reported tests indicating that it should not be difficult to originate strawberry varieties having resistance to both known strains of the red stele (Phytophthora fragariae) root disease fungus. (PDR 35: 134)

Virus diseases. Norman W. Frazier pointed out that strawberry species and varieties may differ markedly in their reaction to strawberry virus diseases. Investigations of strawberry viruses are greatly aided by the use of a test plant that may be readily infected with the different viruses and will clearly express symptoms. F. bracteata was found to be an excellent test plant, that showed marked sensitivity to infection, good differentiation of symptoms, and suitable adaptation to year-round greenhouse conditions. (PDR 35: 127)

P. W. Miller (p. 129) discussed the extent and distribution of virus in wild strawberries in Oregon in 1950. He stated that from the results of this study, it would appear that the presence of wild strawberries in the vicinity of cultivated fields will henceforth have to be taken into account in the general control program.

Miller and F. D. Aldrich (p. 131) reported that the Lindner staining procedure proved to be of limited value for the detection of strawberry viruses.

Yellows. E. P. Breakey and Leo Campbell described experiments, 1947-1950, demonstrating that strawberry plantings can be protected from spread of strawberry yellows by application of insecticides to control the strawberry aphid (Capitophorus fragaefolii). The yellows disease of the strawberry has become the limiting factor in the production of the Marshall variety in the Northwest. The expansion of the industry has been accompanied by a steady increase of the yellows disease. Roguing infected plants from new plantings as soon as the symptoms developed was found to be an essential part of the program. (PDR 35: 63)

MALUS SYLVESTRIS. APPLE. Botrytis sp., leaf spot. C. N. Clayton reported and described a leaf spot of apple, that was very common in many orchards in Wilkes and Alexander Counties, North Carolina in May 1950, due to a species of Botrytis. (PDR 35: 237)

Gymnosporangium juniperi-virginianae, cedar-apple rust, and black rot (Physalospora obtusa) in Connecticut, according to Rich and Stoddard were more prominent this year than in other seasons. (PDR 34: 240)

Stereum purpureum, silver streak, was found to be prevalent in apple orchards in the Spokane Valley and other parts of eastern Washington in 1923. The disease was observed again in the fall of 1950, the first time in a number of years. Symptoms were found in areas where trees had suffered considerable damage from severity of the 1948-1949 and 1949-1950 winters. (Sprague and Hord. PDR 34: 414)

Venturia inaequalis, scab. O. C. Boyd reported apple scab ascospores maturing abnormally early in Massachusetts. (PDR 34: 157). Heuberger, Poulos and Hood reported the earliest development of ascospores on record in Delaware. Ascospores were fully formed in some asci on overwintered leaves collected January 27 at Dover. On leaves collected at the same location on February 6, fully mature colored ascospores were found. January temperatures averaged 10.5° above normal and rainfall was abundant. (PDR 34: 71). Poulos and Heuberger reported a promising fungicide-plant food combination for control of apple scab. (PDR 34: 239)

In Illinois, H. W. Anderson reported that on February 2 he found a few perithecia showing several asci with mature ascospores. These were collected at Urbana, on Jonathan leaves. He stated that this early date consititutes a record for Illinois although in 1942 mature ascospores

were found on February 5. Weather conditions in 1942 were much like those in 1949-50 except that much higher maximums occurred in January 1950. (PDR 34: 71). Scab became serious on McIntosh apples in Connecticut in spite of a very early discharge of ascospores this spring. This condition was caused by a period of warm, wet weather during the last half of May. (Rich and Stoddard. PDR 34: 240). M. C. Richards reported New Hampshire experience with Sulfur-NuGreen combinations for the control of scab. (PDR 34: 299)

PRUNUS. SPP. CHERRY: Ringspot (virus). The stunting effect of latent ringspot virus infection in cherry trees was evident from Oregon experiments reported by J. A. Milbrath. (PDR 34: 374)

PRUNUS ANGUSTIFOLIA. WILD PLUM: Phony peach disease (virus). H. L. Bruer and others reported results of a survey of incidence of phony disease in wild Prunus. In February 1950 a survey was begun of wild Prunus in the southeastern States using the technique of chemically testing stems. P. angustifolia was the predominant species in the area surveyed, therefore the greater number of twigs tested were of that species. Tests were made and material secured from 31 counties in Alabama, Georgia, Mississippi, and South Carolina. Positive reactions were secured from at least one location in 23 of these counties. (PDR 35: 186)

PRUNUS AVIUM. SWEET CHERRY: Buckskin (virus). Nichols and Nyland reported buckskin fruit symptoms on sweet cherry trees on Mahaleb stock. (PDR 35: 32)

Dixie rusty mottle (virus) according to B. L. Richards and others is the most serious of three rusty mottle virus diseases found in Utah. The disease is known to be present only in Washington County, where it is also destructive to peach. Because of the destructive nature of the disease, also because of the ease with which the causal virus can be transmitted, Dixie rusty mottle must be considered a definite threat to the entire cherry industry of Utah. In the cherry the Dixie rusty mottle virus is a killer. (Farm and Home Science 11 (2): 36-37, June 1950)

Winter injury. Conditions accompanying the severe winter injury suffered by sweet cherries in Montana during 1948-49 and 1949-50 were discussed by H. E. Morris and M. M. Afanasiev. The injury manifested itself mainly in sun scald or in flower bud injuries. (PDR 35: 192)

Virus diseases. M. M. Afanasiev and H. E. Morris reported on occurrence of virus diseases in Montana in 1950. Surveys showed that the following virus diseases were found: mottle leaf, ring-spot complex, rasp and twisted leaf. These viroses were present only in traces, with the exception of a rather high percentage of ring-spot complex on May Duke and Stark Golden. Little cherry virosis of sweet cherry has not been reported from Montana. In the spring of 1950 a large number of trees in one orchard showed symptoms similar to a virosis called Lambert mottle. Blotchy mottling was found in practically all varieties of cherries. Traces of crinkle and deep suture were found on several varieties of cherries. (PDR 35: 191)

PRUNUS CERASUS. SOUR CHERRY: Western X-disease (virus). Zeller and Milbrath reported the recovery of western X-disease of peach from Montmorency cherry. Experiments indicated that western X-disease of peach, red-leafed chokecherry, and buckskin of sweet and sour cherries as they occur in Wasco County, Oregon, are caused by the same virus. (Phytopath. 40: 707)

PRUNUS PERSICA: PEACH: Diaporthe eres, constriction disease, is of major importance on the Eastern Shore of Maryland in certain seasons favorable for the disease, according to L. O. Weaver. The disease has not been controlled either by spraying or by pruning. The susceptible Golden Jubilee variety was removed from the orchards by the growers during 1950. (PDR 35: 144)

Meloidogyne incognita and M. javanica, root knot nematodes. According to Leon Havis and others the problem or root knot nematode damage to peach tree roots is one of the most serious faced by growers and nurserymen in the more southern States. They give a brief report of a detailed study of the relative susceptibliity of some peach rootstocks to the two principal species of peach nematodes. The great variability in resistance to the two nematode species shown by the hybrid seedling stock was encouraging. It is thought that through modern breeding methods nematode resistant stocks giving good orchard trees can be developed. (PDR 34: 74)

Monilinia fructicola, brown rot. In Illinois experiments in 1949 and 1950 reported by Dwight Powell showed that sprays containing Phygon XL were superior to other treatments in reducing blossom blight infection on peaches. By increasing control of such infection during the

blossom period it was possible to retard the rate of development of the preharvest fruit infection. (PDR 35: 76)

Phony peach (virus) control has been complicated by the spread of the disease on wild Prunus. According to Bruer and others the disease is apparently more prevalent in wild Prunus in those areas where records of orchard inspections demonstrate that there is higher incidence in peach. Apparently the factors that favor the rapid spread and development of the disease in one host are also favorable for its development in the alternate host. (PDR 35: 186)

Ring pox (virus). Experimental transmission of the apricot ring pox virus to peach and plum was reported by Austin O. Simonds. (PDR 35: 189)

Yellow leaf roll (? virus). In Yuba and Sutter Counties, California, Nyland and Schlocker reported a disease they are calling yellow leaf roll. There seems little doubt that the causal agent is a virus. The disease has spread rapidly during the last three years. In one block of about 900 trees, 8 diseased trees were found in 1948, 25 additional trees in 1949, and 80 additional trees in 1950. (PDR 35: 33).

PYRUS COMMUNIS. PEAR: Isopropanol, a constituent of a glyoxalidine fungicide, hastened the ripening of Bartlett pears after harvest according to evidence reported by E. E. Wilson. (PDR 35: 38)

RUBUS SPP. CANE FRUITS: Edward K. Vaughan and others reported the results of a survey of cane fruit diseases which was conducted in the Pacific Northwest during June 1950. The purpose of the survey was to determine what virus diseases were present in the area, where and on what varieties they were the most prevalent, and the relative severity of each. Observations were also made for diseases of pathogenic and physiologic origin. (PDR 35: 34)

VACCINIUM SPP. BLUEBERRY: Physalospora corticis, stem canker. Demaree and Morrow reported that stem canker in blueberries is southern in its adaptation and distribution. They discussed relative resistance of some blueberry varieties and selections to stem canker in North Carolina. There was no immediate problem concerning stem canker resistance in the rabbiteye blueberry as all standard varieties were either immune or highly resistant. (PDR 35: 136)

VITIS SPP. GRAPE: Cryptosporella viticola, dead arm. Wm. B. Hewitt reported results of spray experiments for control of this disease in California. The severity of the disease was only moderate in 1950. DN-289 appeared to have considerable promise as a spray control for the spring infections of dead-arm and was also less hazardous than sodium arsenite. (PDR 35: 142)

Mosaic (virus). Hewitt stated that vine mosaic (virus) was becoming increasingly prevalent in young vineyards in California. Spread appeared to occur through buds or scion wood from affected vines. The best method of preventing spread consisted in selecting, propagating, and planting only clean, healthy stock. (Bull. Dept. Agr. Calif. 39, 2, p. 61, 1950)

DISEASES OF NUT CROPS

CARYA ILLINOENSIS. PECAN: Articularia quercina var. minor was collected on pecan at the Brownwood Station, Texas, in 1950. The first collection in Texas was made in 1933. The fungus was collected in Mississippi in 1920, on Quercus sp. (John R. Cole. PDR 34: 414)

P. W. Miller reported on nut diseases in Oregon in 1950:

CORYLUS SP. FILBERT: Phyllactinia corylea, mildew, was of no economic importance, since it did not make its appearance until late in the season.

Xanthomonas corylina, bacterial blight, was widely distributed in 1950. It was most prevalent in young orchards, where it caused the death of a number of young trees.

Brown-stain (non-parasitic) was present in limited amounts in some filbert orchards in western Oregon in 1950. The estimated average crop loss was 2 percent.

JUGLANS REGIA. PERSIAN WALNUT: Armillaria mellea, mushroom root rot, caused the death of some Persian walnuts and of a limited number of Franquette walnuts grafted on Hind's black walnut rootstock (Juglans hindsii). This finding is noteworthy as this rootstock is considered to be highly resistant to this disease.

Blackline (girdle) of grafted walnuts (non-parasitic) was responsible for the death of more grafted Franquette walnut trees in 1950 in Oregon than any other disease.

Leaf scorch (non-parasitic) was widely distributed in the Pacific Northwest in 1950, occurring in many Persian walnut orchards in Oregon. (PDR 35: 145)

DISEASES OF ORNAMENTALS

R. A. Jehle and others listed spot anthracnoses known to occur in Maryland and their distribution by counties. (PDR 35: 194)

A. C. Tarjan presented observations on nematodes associated with decline or ornamental plantings, and concluded that the staggering weight of evidence must eventually force realization of the seriousness of the problem and stimulate much needed research. (PDR 35: 217)

Studies on vectors, hosts and properties of dahlia-mosaic virus were reported by Philip Brierley and Floyd F. Smith. Sanvitalia procumbens, Verbesina encelioides, and Zinnia elegans can be infected with dahlia-mosaic virus, developing symptoms similar to those expressed by dahlia. Coreopsis douglasii developed no symptoms when inoculated, but dahlia-mosaic virus was recovered. (PDR 34: 369)

ACHILLEA SPP. YARROW: Agrobacterium tumefaciens, crown gall, was observed on ornamental types of yarrow imported from out of the State of California. (PDR 35: 42)

ANTIRRHINUM MAJUS. SNAPDRAGON: Oidium sp. of the Erysiphe cichoracearum type, powdery mildew. MacLean and Baker reported occurrence of powdery mildew on outdoor snapdragons in home gardens in the Los Angeles and Berkeley areas under humid and shaded conditions. Probably the fungus has recently been introduced on greenhouse planting stock into these two areas of California and its spread has so far been limited to these areas. (PDR 34: 346)

CAMELLIA SPP. CAMELLIA: The Bureau of Entomology and Plant Quarantine reported the results of the cooperative Federal-State camellia flower blight survey from December 1949 to March 1950. The States included Alabama, Florida, Georgia, Louisiana, Mississippi, New York, North Carolina, South Carolina, Tennessee and Texas. The survey disclosed that while most of the trade in camellia plants in the Southern States and Texas is local within that group of States, a considerable number of plants, shipped with soil, have been obtained by growers in these States from California for a number of years. Positive determinations were made from specimens collected in North Carolina and Georgia. (PDR 34: 264)

CHRYSANTHEMUM MAXIMUM. ESTHER READ DAISY: K. F. Baker reported that fasciation disease (Corynebacterium fascians) occurs on many ornamentals in California, but causes losses of economic importance only to Esther Read daisy. It was first observed on this host in various localities in southern California in 1945 on plants growing in irrigation ditches, and it reduced greatly the cut-flower production. The disease is now generally established in the southern part of the State. In March 1950, it was reported to be destructive in a commercial planting in San Mateo County. A list (compiled from the literature) is presented of the host range of the pathogen, consisting of 34 genera in 21 families. (PDR 34: 121)

Septoria leucanthemi, Septoria leaf spot, on Esther Read daisies has been a limiting factor in the production of this crop in the cool, foggy, coastal areas of San Mateo County, in California. Growers estimated that losses from this disease range from 15 to 50 percent of the crop, depending upon the weather during the growing season. Symptoms and results of control tests were discussed. (N. A. MacLean, Florists' Review 107: 35, Nov. 23, 1950)

CHRYSANTHEMUM MORIFOLIUM. CHRYSANTHEMUM: Septoria chrysanthemi, Septoria leaf spot, has been reported as serious in the eastern United States, but is usually of minor importance on commercial outdoor chrysanthemums in California. The only recorded severe outbreak was in February 1950, when the disease was found to be serious on chrysanthemum cuttings under cloth in the Redwood City area of San Mateo County.

DIANTHUS CARYOPHYLLUS. CARNATION: Peronospora dianthicola was reported by Gardner and Yarwood in a nursery at Colma, California. This disease has occurred every year since 1946. (PDR 34: 270)

Fusarium wilt. Stoddard and Dimond stated that the chemotherapeutic approach to the control of plant diseases is a rapidly advancing realm of plant pathology. They reported on the chemotherapeutic control of Fusarium wilt of carnations. (Phytopath. 41: 337)

ERICA SPP. HEATHER: Chlorosis. Spraying with ferrous sulfate controlled chlorosis in commercial plantings of heather in California. (Sciaroni and Zentmyer. PDR 34: 402)

GLADIOLUS SPP. GLADIOLUS: Fusarium orthoceras var. gladoli, corm rot and yellows is the most destructive disease of gladioli, according to Robert O. Magie, who stated that this disease destroyed approximately two million dollars' worth of gladiolus flower spikes and corms during the 1949 to 1950 season in Florida. This fungus exists in many strains. Florida probably harbors the most virulent strains, because corms are shipped there by the million from many States and foreign countries. Research has shown that the Fusarium disease can be controlled economically. Magie pointed out the most successful steps in a successful control program. (The Florists' Rev. 106, no. 2738; 28-30. May 1950). Results of tests for gladiolus dry rot, (Stromatinia gladioli), control in western Washington in 1950 were reported by Charles J. Gould. Mersolite definitely appeared to be promising. (PDR 35: 109)

LILIUM LONGIFLORUM: Frank P. McWhorter and C. J. Anderson reported diseases found in Croft lily plantings in Oregon in 1949-50. The principal diseases of L. longiflorum continued to be scale tip rot (Cylindrocarpon radicicola), Botrytis blight (Botrytis cinerea), scorch (physiological), dieback and bunchy top (Aphelenchoides olesistus), streak-fleck complex (virus), and Colletotrichum scale rot. Meadow nematodes (Pratylenchus spp.) were present in one California and four Oregon locations, and appeared to be the most destructive pest that has occurred in these lilies. (PDR 35: 106)

ORCHIDACEAE. ORCHIDS: Ark and Starr described three bacterial diseases, Phytomonas cattleyae, Erwinia cypripedii and an unidentified species of bacterium of orchids, and their control in central California. They sometimes cause considerable losses. (PDR 35:42)

PEPEROMIA SPP. PEPEROMIA: Phytophthora palmivora, rot, was found in 1950 on Peperomia plants in California. In one greenhouse 50 percent of the plants were affected by the disease. Peperomia plants are extensively propagated by nurserymen in the San Francisco Bay area. The disease was controlled by using cuttings from healthy plants and planting them in pasteurized soil mixture. (Ark and DeWolfe. PDR 35: 46)

DISEASES OF SPECIAL CROPS

ARACHIS HYPOGAEA. PEANUT: Sclerotium rolfsii, stem and pod rot, in New Mexico according to P. J. Leyendecker, Jr. accounted for a 20 to 30 percent reduction in yield in the Portales area. Approximately 7,000 acres were involved, with a cash loss to the growers of about $200,000. The disease was aggravated by high soil moisture and cool soil temperatures during July. (PDR 35: 168)

CARTHAMUS TINCTORIUS. SAFFLOWER: Alternaria carthami, leaf spot, in 1950, was of minor importance in Colorado and western Nebraska, but was prevalent in experimental plantings in central and eastern Nebraska, Kansas and Oklahoma, and Texas under more humid conditions. (C. A. Thomas. PDR 34: 391)

Donald C. Erwin reported that the cause of a root rot of safflower occurring in Nebraska, had been identified as Phytophthora drechsleri. A high percentage of infection was readily obtained in greenhouse pathogenicity tests. Some varieties have been reported to be resistant to root rot. No other control is known. Since the disease occurs at high temperatures, early planting and the limitation of irrigation to periods when the soil temperature is at a minimum, preferably 15° to 17° C., or lower, might be effective (PDR 34: 306). Thomas reported this root rot was very destructive in southern California, and that it was observed in Arizona, Oklahoma, Texas, Kansas, Colorado and Nebraska.

Puccinia carthami, rust, was much more prevalent this year in Colorado and Nebraska tha in 1949. A few plantings affected with rust were observed in Kansas and California. (C. A. Thomas. PDR 34: 391)

GOSSYPIUM SPP. COTTON: Ascochyta gossypii, Ascochyta seedling blight, became general in the northern third of Alabama in 1950, according to A. L. Smith. In DeKalb County many stands were reduced to between 50 and 70 percent. Frequent local showers and prolonged cool weather in this area were responsible for the epidemic. Evidence obtained indicated that the disease is seed-borne. All 25 varieties of cotton tested proved susceptible in the seedling

stage. The author suggested "wet weather blight" as a common name for the disease. (PDR 34: 233). According to Aycock and Arndt infection of young cotton plants by A. gossypii resulted in extensive losses for the fourth consecutive year in localized areas of South Carolina. The losses from boll rots in South Carolina in 1950 that were not associated with insects were relatively small as compared with those for 1949, when losses from the State as a whole averaged above 30 percent. The comparative weather records for 1949 and 1950 would seem to indicate that the amount of boll rot in these two years was related to the amount of rainfall in August rather than to that in July. About 80 percent of the bolls injured by insects and fungi were completely decayed. Most of the bolls were covered with the mycelia of Diplodia gossypina. (PDR 35: 204)

Verticillium albo-atrum, wilt, was found in several fields in Caddo, Bossier, and East Carroll Parishes, Louisiana, during July and August, infection ranging from 5 to 30 percent. This disease is now known to occur in three of the important cotton producing parishes of the State. (PDR 34: 353) This wilt was unusually severe during the 1950 season in the Mesilla Valley of New Mexico and El Paso Valley of Texas. Losses vary from year to year depending upon the time of the season when soil temperatures become favorable for disease expression. In the 1950 season the disease appeared early, in mid-July. (P. J. Leyendecker, Jr. PDR 35: 169) According to work at the Arizona Agricultural Experiment Station and reported by Ross M. Allen cotton seeds inoculated with the Verticillium become infected and carry the fungus over extended periods of time. (PDR 35: 11)

The factors contributing to Verticillium wilt of cotton in the Southwest have been in question for a number of years, according to Blank and Leyendecker. They showed data which demonstrated the potentialities of wilt-infected stalks as a means of spreading wilt to areas previously free from the disease. (PDR 35: 10)

MENTHA SPP. MINT: Puccinia menthae, rust, caused considerable damage to spearmint in the Midwest and many growers cut the herb early to avoid losses from leaf fall. Reports from Oregon indicated that peppermint was severely damaged by rust in that State (C. A. Thomas. PDR 34: 391). Row plantings of Scotch spearmint were dusted in 1948, 1949 and 1950 for the control of rust. In Michigan, plantings of peppermint adjacent to rusted spearmints remained rust-free. Control plants were moderately rusted in 1948, rust-free in 1949, and killed by the disease in 1950. Under severe conditions in 1950 Fermate gave protection much superior to that of other materials. Actidione and tribasic copper sulfate-zinc dusts are most likely to be useful in mint rust control. (Ray Nelson. Phytopath. 41: 27).

Verticillium albo-atrum var. menthae, wilt, was unusually severe on peppermint in Indiana and Michigan. Spearmint was also affected. Weather conditions were particularly favorable for heavy infection and development of the disease. (C. A. Thomas. PDR 34: 392)

NICOTIANA TABACUM. TOBACCO: Wilbert A. Jenkins described the symptoms of a seedling root rot-complex, associated with nematodes, causing tobacco plant bed failures in Pittsylvania County, Virginia. He doubts that the disease is a new one. (PDR 35: 177)

Peronospora tabacina, blue mold. Because of the mild, late outbreak of blue mold in 1949, and therefore limited carryover, Valleau and others in Kentucky predicted to farmers and manufacturers of ferbam that there would be an extremely mild outbreak in 1950, unless there was a blow-in of spores from the Southeast. There was some infection by June 9, but no injury was caused. Valleau stated that there should be no blue mold in Kentucky in 1951 unless there is a blow-in from the Southeast, causing early infection over Tennessee and Kentucky. Spores have blown in from the Southeast only twice, in 1937 and 1945, in the 20 years the disease has been established in the East (PDR 34: 210). In the final summary of the plant disease warning service (PDR Suppl. 197: 559), Miller and O'Brien stated that severe tobacco blue mold was reported in certain localities, but that the disease on the whole was relatively mild, despite the general distribution throughout the tobacco-growing areas. Fungicides used indicated the preference for Fermate.

Pseudomonas tabaci, wildfire. W. D. Valleau, in Kentucky, stated that probably the worst outbreak of wildfire experienced in the State in over 30 years was associated with an unusually wet May. Since Bordeaux did not give good control, it was concluded that the time of plowing the beds was the explanation. The wildfire bacteria live normally on the roots of many pasture plants and weeds. When the beds are plowed in the fall the roots die and the bacteria finally disappear from the soil, in the absence of live roots. When the sod is turned up in late winter and the bed is moderately burned the bacteria are probably abundant a couple of inches down. While wildfire was common, angular leaf spot (P. angulata) was rare. (PDR 34: 210)

Tobacco-mosaic virus. Francis O. Holmes furnished evidence to support the hypothesis that

tobacco-mosaic virus was of New World origin. (Phytopath. 41: 341)

RICINUS COMMUNIS. CASTOR BEAN: Alternaria ricini, capsule mold. Unusually wet summer weather in Oklahoma and northern Texas resulted in considerable capsule mold.

Plants in an experimental planting at Shafter, California were affected with what was tentatively identified as Verticillium wilt. The soil was known to be heavily infested with Verticillium albo-atrum which causes cotton wilt. (C. A. Thomas. PDR 34: 391)

RUMEX HYMENOSEPALUS. CANAIGRE: Meloidogyne incognita, root-knot nematode, infection is described on canaigre roots, as observed in Arizona, by Reynolds and Sleeth. They state that it is not known to what extent root-knot nematodes will reduce yields or impair the roots for processing. (PDR 35: 9)

Ovularia canaegricola, leaf spot, caused serious damage to experimental plantings of canaigre at Chandler Heights, Arizona, according to L. M. Pultz. The spread of the disease is being watched because of the possible effect of the leaf spot on root production in the plants. (PDR 34: 157). This disease is described and illustrated by J. G. Brown and Alice M. Boyle. Since it is spread by aerial conidiospores, they suggest that spraying the plant with Bordeaux mixture or other good fungicide should protect against Ovularia leaf spot. (PDR 34: 178)

SACCHARUM OFFICINARUM. SUGARCANE: Cercospora longipes, brown spot, a leaf disease, according to E. V. Abbott has been present in Louisiana for many years, but until the release and widespread growing of the susceptible variety, C.P. 36/105, it had not been of commercial importance owing to the resistance of the varieties previously grown. During the crop season of 1950 a combination of conditions, such as temperature and field practices, favored the disease so that it developed to rather severe proportions on C. P. 36/105 in several parts of the sugarcane district of the State. Surveys showed brown spot to be commonly present on this variety in the southeastern parishes. It was found to be prevalent in St. Mary, Iberia and St. Martin Parishes. It was observed on one farm in Lafayette Parish and was not found in Vermillion Parish. Abbot discussed the importance and losses caused by the disease and its control. (Sugar Bull. 29: 134, Feb. 1, 1951)

SESAMUM ORIENTALE. SESAME: Cercospora sesami, has been observed in Maryland, South Carolina and Texas. The organism is known to be seed-borne.

Fusarium wilt of sesame was found at Charlotte Court House, Virginia in 1950, according to Sears and Wingard. (PDR 35: 173)

Pseudomonas sesami, bacterial leaf spot, appeared to cause one of the most serious diseases of sesame. The disease has been observed from Maryland to Texas. Late plantings at Chillicothe, Texas were a complete loss from this disease. (C. A. Thomas. PDR 34: 392)

ZOSTERA MARINA. EELGRASS: A history of the wasting disease of eelgrass on the Atlantic Coast, with known facts about the epidemic, which if measured by its effect on the host plant is the most devastating in the history of plant pathology, and speculation as to the factors involved was reported by Neil E. Stevens, Hazel R. Ellis and Russell B. Stevens. (PDR 34: 357)

DISEASES OF TREES

David M. Marsden analyzed Massachusetts precipitation data since 1928, with reference to tree injury. (PDR 34: 400)

CASTANEA SPP. CHESTNUT: Bowen S. Crandall, in reviewing the distribution and importance of the chestnut root rot Phytophthoras (P. cinnamomi and P. cambivora), stated that it would appear that P. cinnamomi is one of the world's major plant killers. A monographic study of this species is certainly indicated since its wide distribution makes it probable that a historical study of its movements and distribution on plant groups would aid considerably in the understanding of the modes of distribution of plant pathogens which, unlike many, do not possess spore forms easily carried by various means. Many inferences could probably be drawn by a study of its known hosts and their resistant or immune relatives. (PDR 34: 195)

CASTANEA MOLLISSIMA. CHINESE CHESTNUT: Chalara quercina, oak wilt. T. W. Bretz reported that the pathogenicity of the oak wilt fungus to Chinese chestnut was demonstrated by experiments. Although the number of trees involved in this preliminary work was small the

results indicated that the oak wilt fungus was a virulent pathogen in the C. mollissima accessions tested and that interspecies transfer of the fungus from oak to chestnut may occur. (PDR 35: 28) The fungus was first isolated from 5 C. mollissima trees growing in a plantation in Missouri. (Bretz and Long. PDR 34: 291)

CORNUS FLORIDA. FLOWERING DOGWOOD: Ascochyta cornicola, leaf disease, that causes spots and shriveling of entire leaves of dogwood, has been epidemic through the mountain areas of Virginia and North Carolina in 1950. This same disease was epidemic in 1942 and had not been conspicuous enough to be noticed between those years. (George P. Hepting. PDR 34: 227)

Elsinoë corni, spot anthracnose. Jehle and Jenkins reported further observations on spot anthracnose in Worcester County, Maryland and Lynchburg, Panorama, and Madison, Virginia in 1950. (PDR 34: 225)

On July 6, 1950, leaves of dogwood, heavily infected with spot anthracnose, were collected at Trail's Cabin, Blue Ridge Parkway, near Floyd, Virginia, according to George P. Hepting. The Superintendent of the Parkway wrote that approximately 50 percent of the trees in the Parkway south of Roanoke were infected and on Section 1-U it was epidemic (PDR 34: 227)

PINUS PONDEROSA SCOPULORUM. PONDEROSA PINE: Cronartium comandrae, rust. According to Willis W. Wagener a severe cold spell practically eliminated comandra rust in experimental ponderosa pine plantations in Idaho. (PDR 34: 193)

PLATANUS OCCIDENTALIS. SYCAMORE: In Georgia, G. E. Thompson described a dieback of sycamore, which has been observed during the past two summers. Diplodia natalensis was isolated from the diseased wood. Inoculations were made on small trees, and within a few weeks all inoculations showed infection. (PDR 35: 30)

QUERCUS SPP. OAK: Marvin E. Fowler reported methods and results of the oak wilt (Chalara quercina) surveys in 1950, together with the known distribution of the disease in the United States. In 1950 willow oak (Quercus phellos) and southern red oak (Q. rubra) were found for the first time to be naturally infected. No native oak species is known that is immune to this disease. (PDR 35: 112)

With the discovery of extensive natural root grafting and of passage by the fungus from tree to tree through such grafts, local control of oak wilt in certain Wisconsin areas was accomplished Immediate removal of each wilting tree retarded the disease in 11 out of 18 eradication plots. There has been developed a tractor drawn knife that moves 100 feet per minute, and cuts roots to a depth of 36 inches. This cutter was used in 12 plots in 1950. (Kuntz and Riker. Phytopath. 41: 23)

Irpex mollis, canker. Elmer R. Roth described cankers and decay of oak trees associated with this fungus. Loss from I. mollis was believed to be of minor economic importance. Apparently there is no relation between tree vigor and the occurrence of I. mollis cankers, since they were found on both slow growing and fast growing oaks on both good and poor sites. Cankers are fairly common in the vicinity of Walhalla, South Carolina and in adjacent areas in Georgia. (PDR 34: 347) For oak wilt in Pennsylvania and Illinois see Table 1.

QUERCUS ALBA: WHITE OAK: Gnomonia veneta, anthracnose. Charles L. Fergus reported an epiphytotic of white oak anthracnose in Pennsylvania in 1950. No specific data are available for the severity of anthracnose on white oaks under forest conditions, but causal observations showed a considerable amount. Meteorological data for State College were examined in an attempt to correlate weather conditions and the recorded epiphytotics of 1944 and 1950. The weather conditions which prevailed in both 1944 and 1950 and which appear to have determined the occurrence of severe anthracnose were: (1) an open winter with temperatures of the winter months higher than normal, (2) a delayed spring with deep snow cover in March and temperatures of March and April lower than normal, (3) moderate precipitation recorded for a large number of days, and (4) low percentage of effective sunshine hours possible. (PDR 34: 292)

ULMUS AMERICANA. AMERICAN ELM: Zonate canker (virus) according to Swingle and Bretz, is a previously undescribed disease of Ulmus americana that is transmissible by grafting and apparently of virus nature. Attempted transmission of the zonate canker virus by leaf inoculations failed, but some transmission attempts other than by common grafting techniques were successful. The zonate canker virus has been found to occur in trees in New Jersey, Ohio

and Missouri. It has been found alone and in combination with the elm mosaic virus. (Phytopath. 40: 1018)

DISEASES OF VEGETABLE CROPS

Warren N. Stoner listed some diseases which caused major economic losses in vegetables in the Everglades region of Florida during the 1949-1950 season. (PDR 35: 170)

ALLIUM ASCALONICUM. SHALLOT: Peronospora destructor, downy mildew. In Louisiana, E. C. Tims reported that in the last four years, 1947-1950 inclusive, there have been three very destructive epidemics. The disease had caused such serious losses that some farmers who had grown onions for many years had given up the crop entirely. For many years mildew was observed occasionally on shallot, but never developed in epidemic proportions. During the past five years the disease has become a major problem for shallot growers especially along the Mississippi River and Bayou Lafourche sections. In 1950, mildew occurred in January on both shallots and onions. The losses from shallot in 1950 were probably the heaviest on record. Many fields were a total loss. Mildew appeared in the Angola shallot producing area for the first time in 1950. It was also very destructive on onions in 1950. The onion seed crop was almost a total failure. The final solution to this problem in Louisiana seems to be the development of resistant varieties. (PDR 34: 380)

ALLIUM CEPA. ONION: Peronospora destructor, downy mildew. In Connecticut, Rich and Stoddard reported that on June 21 a half-acre of onions being grown for sets was found to be 100 percent infected with downy mildew. The field had been used repeatedly for growing onions. The leaves were completely gone, the stalks were severely infected, and there was abundant conidial production. This was the first Connecticut report of such a heavy infestation of this disease in the past eleven years. See also under A. ascalonicum. (PDR 34: 240)

Urocystis cepulae, smut. In Cook County, Illinois, the pelleting of bulb-onion seed with Arasan (50% thiram, nonwettable in water) has replaced almost entirely the formaldehyde-drip treatment as a control for smut (Urocystis cepulae) according to M. B. Linn. From 95 to 100 percent of the plants from untreated seed were killed in many Cook County fields. (PDR 35: 94)

A. G. Newhall and W. W. Gunkel described a duster used in 1950 for row application of fungicides and insecticides at the time of sowing seeds. The method and equipment was used in New York in the control of onion smut and maggot. Much interest has been aroused since this method may lend itself to the control of other seedling diseases and insect pests of a wide variety of crops. (PDR 35: 219)

APIUM GRAVEOLENS. CELERY: Cephalosporium sp., brown spot. Occurrence of this brown spot disease on stalks of celery in New York apparently is correlated with high seasonal temperatures, according to observations reported by Ralph Segall. The temperature during the 1950 season was slightly below normal, and the disease was not found. (PDR 35: 164)

CUCURBITS. CUCUMBER, MELON, SQUASH: Pseudomonas lachrymans, angular leaf spot. F. S. Beecher and S. P. Doolittle gave evidence indicative of insect transmission of angular leaf spot. (PDR 34: 382). In another article they reported control of angular leaf spot with a copper fungicide. (PDR 34: 383)

D. E. Ellis, in reporting occurrence and control of some noteworthy diseases in North Carolina, stated that anthracnose (Colletotrichum lagenarium) caused as much or more damage to cucumber in 1950 as did downy mildew.

Pseudoperonospora cubensis, downy mildew, developed more slowly on cucumber in North Carolina than it did on muskmelon. It was thought that a new physiological race of the fungus might be present in 1950. (PDR 35: 91). G. K. Parris reported that it has been found possible to preserve the viability and infective power of conidia of P. cubensis, on detached squash leaves, for six months. (PDR 35: 52). In the summary of the plant disease warning service for 1950, Miller and O'Brien stated that cucurbit downy mildew occurred along the Atlantic Coast seaboard and in the southern part of Texas. Losses were reduced, since the disease appeared later than normal when the crop was mature or nearing maturity.

Mosaic (virus). In California the response of the mosaic-infected cantaloupes to nitrogen fertilizer appeared to be an increase in size of fruit, and reduction in number of slick fruits. No increase in the number of fruits set, total soluble solids of the fruits, nor retardation in the rate of maturity was apparent with the use of more than 60 pounds of nitrogen per acre. (F. W. Zink

and G. N. Davis, PDR 34: 371). Mosaic was unusually severe in experimental plantings of cucumber and summer squash in Duplin County, North Carolina in the fall of 1950. (PDR 35: 91)

Incidence of some vegetable crop diseases in Massachusetts was reported by O. C. Boyd. He stated that in no previous season have the cucurbit viruses been so damaging. It was doubtful if a single planting of cucumbers escaped mosaic, and some fields, the earlier plantings in particular, were almost totally destroyed. Even the fields and gardens that were thoroughly dusted or sprayed suffered moderately to severely. Thrips were abnormally numerous this year. (PDR 34: 339)

Preliminary data toward identification of three viruses or virus strains infectious to cucurbits, collected in central Florida in 1950 were reported by C. W. Anderson. (PDR 35: 233)

IPOMOEA BATATAS. SWEETPOTATO: Monilochaetes infuscans, scurf, was present in most plantings of sweetpotatoes in New Mexico. Market grade was reduced and some fields were not harvested because of the severity of the disease. (P. J. Leyendecker, Jr. PDR 35: 169)

Internal cork (virus). In Oklahoma and California, see Table 1.

LACTUCA SATIVA. LETTUCE: Bremia lactucae, downy mildew, made a sporadic appearance again in the spring of 1950 in Connecticut, according to Rich and Stoddard. The mildew attacked the young plants in cold frames just prior to the time of setting out. (PDR 34: 240) Downy mildew caused serious loss of plants in isolated propagation frames in the vicinity of Burgaw and St. Helena, North Carolina, in January 1950, according to Frank A. Haasis and D. E. Ellis. They reported the effect of soil fumigation and soil drench treatments with fungicides on incidence of downy mildew in the seed bed. The results of this study re-emphasized the importance of applying fungicidal drenches to lettuce seedlings propagated in the cold frame. (PDR 34: 310)

Big-vein (virus) has become of increasing importance in Connecticut since it was first observed in 1946, according to the report by Saul Rich. It causes the greatest loss in head lettuce grown for the early market. Infected heads do not head until the weather becomes warm, by which time the early, high prices are no longer available. Four materials were tested as soil treatments for the field control of this disease. (PDR 34: 253). Rich and Stoddard reported 8 to 10 percent infection of big-vein in Connecticut lettuce plantings (PDR 34: 240)

LYCOPERSICON ESCULENTUM. TOMATO: The results of tests with fungicides for the control of tomato plant diseases in south Georgia in 1949-50 were summarized by Huey I. Borders. (PDR 35: 98)

Botrytis cinerea, gray mold. In Florida Stoner and Hogan reported that the 1949 fall crops and the 1950 spring crops of tomatoes in the Fort Pierce area suffered considerable damage from infection of gray mold. Fruit losses ranged from 100 percent to a trace. About eight different sprays were used. In no case was any discernible control observed. (PDR 34: 210)

Varietal reaction in the field of 17 tomato varieties to blossom-end rot (non-parasitic), Colletotrichum phomoides, anthracnose, and Verticillium albo-atrum, Verticillium wilt, in 1949 and 1950 was reported by W. T. Schroeder. (PDR 35: 160)

Phytophthora infestans, late blight. P. A. Young reported the first epidemic of tomato late blight in central east Texas in 1950. Cool rainy weather from May 11 to June 11, with over 8 inches of rain in 15 days and temperatures of 15° to 25° C. about half of the time facilitated development of the disease. Late blight appeared on fall tomatoes also this year, for the first time in East Texas. (PDR 34: 338). Data on distribution and severity of tomato late blight in Ohio was summarized by J. D. Wilson. Answers to questions concerning the percentage of total acreage treated indicated that approximately 62 percent was sprayed or dusted one or more times. Approximately 60 percent of the acreage showed the disease. Late blight was so severe in some fields that it would not be reasonable to expect that complete control could have been obtained by any means. However, reports indicated that the disease was much less severe in treated fields. (PDR 35: 52). In Louisiana, according to W. J. Martin infected fresh-market tomato fruits may be a source of late blight inoculum. (PDR 34: 236). In the final summary (PDR Suppl. 197: 559) of the plant disease warning service in 1950, Miller and O'Brien reported that late blight of tomato was of economic importance. The severity and loss equalled or possibly exceeded that suffered from the destructive 1946 outbreak. Estimated percentage reduction in yield of late blight infected acreages varied from a trace to 95. Infection sources included airborne spores, potato dump piles, southern-grown plants, and volunteer potato plants. Noteworthy was the spread of the disease westward into Arkansas, Missouri, Iowa and Nebraska. Weather conditions in 1950 were extremely favorable for the development of late blight. Fungicides

used as sprays and dusts were listed, also the formulae, results obtained, and the effectiveness of the control measures.

Sclerotina sclerotiorum. Roy Bardin reported an unusual occurrence of ascospore infection of tomatoes by S. sclerotiorum in a field of about 20 acres grown for seed production in the Salinas area of Monterey County, California, early in October 1950. (PDR 35: 246)

Stemphylium solani, gray leaf spot. Results of fungicide tests for the control of this leaf spot of tomato in Florida were reported by Robert A. Conover. All fungicides providing zinc ethylene bisdithiocarbamate, with the exception of Parzate, were outstanding in gray leaf spot control. (PDR 34: 182)

Gray wall or vascular browning was reported by L. P. Nichols and Edwin E. Honey in commercial tomato fields and greenhouse plantings and in a few home gardens in Pennsylvania during the summer of 1950. Although gray wall has caused loss in previous years in Pennsylvania, growers are becoming increasingly alarmed about the trouble. During the season of 1950, 33 percent of the crop in one greenhouse and up to 25 percent of the crop in some commercial fields were affected. (PDR 35: 55). Internal or "vascular" browning, a new trouble affecting tomatoes, was observed on commercial truck farms in Virginia for the second year, according to S. B. Fenne. (PDR 34: 352). Evidence from Florida investigations indicated that gray wall or internal browning disease of tomatoes, as it occurs in Florida, is due to physiological factors, according to Warren N. Stoner and William D. Hogan. (PDR 34: 379)

Spotted wilt (virus). In California experiments reported by Michelbacher and others showed that field dusting of tomatoes with DDT controlled thrips very well, but did not result in a proportional reduction of spotted wilt carried by this insect. (PDR 34: 307)

Russet mite. Recurrence of russet mite damage to tomatoes in Texas has been reported by P. A. Young and others. It was recommended that all of the tomato plants in a field be killed to destroy the russet mites and other pests as soon as possible after fruit picking had been completed. This method was very effective in Cherokee County in preventing damage from russet mites in 1950. (PDR 35: 54)

PHASEOLUS VULGARIS. BEAN: Axel L. Andersen reported on incidence of bean diseases in Michigan. Generally infected seed from the 1949 crop, and favorable conditions for spread in 1950, resulted in heavy direct and indirect losses from bacterial blights (Xanthomonas phaseoli and X. phaseoli var. fuscans) and anthracnose (Colletotrichum lindemuthianum). (PDR 35: 89)

PISUM SATIVUM. PEA: E. M. Stoddard and G. A. Zentmyer reported results of Connecticut experiments on the control of damping-off (Pythium spp.) with 8-quinolinol. Trials have been conducted with spinach, peas, eggplant, lettuce, petunias, snapdragons, celery, tomatoes, and elms. (PDR 34: 236)

Uromyces fabae, rust, was observed in July in a home garden on the Oregon coast, according to Frank P. McWhorter. This seemed to be the first report of this rust in Oregon since 1934. The plants in the garden were largely defoliated by the rust, indicating that should the disease become established in commercial peas it would prove extremely destructive. (PDR 34: 269)

Pea enation mosaic virus. In New York, in seed increase fields, W. T. Schroeder analyzed the reaction of 218 varieties and strains of peas to an unusually heavy development of pea enation mosaic virus. Only one line had any healthy appearing plants at the end of the season. (PDR 35: 156)

RHEUM RHAPONTICUM. RHUBARB: Charles Chupp reported that Ascochyta leaf spot of rhubarb developed earlier this year than his records showed for any previous season. Not only were the leaves affected but the disease was serious enough to spot the stems. This is the same fungus which had formerly been named Phyllosticta straminella. (PDR 34: 240)

SOLANUM TUBEROSUM. POTATO: Ditylenchus destructor, potato rot nematode. H. J. Conkle and C. H. Rothe summarized results of the potato rot nematode surveys in 1949 and 1950. These surveys offered reasonable assurance as to the distribution of this pest in the Western States. None was found in two years' survey in California, Colorado, Montana, Nevada, Oregon, or Utah; nor was any found in the 1950 survey in Nebraska or Wyoming. In Idaho, only a few additional infested fields were found, which were close to previously known infestations. (PDR 35: 3)

Heterodera rostochiensis, golden nematode. Feldmesser and Fassuliotis reported on the reaction of the golden nematode of potato to controlled temperatures and to attempted control

measures. (Jour. Wash. Acad. Sci. 40: 355). J. N. Sasser and others reported results of studies on the control of the golden nematode of potatoes with Systox spray (E-1059), an organic phosphate insecticide. (PDR 35: 152)

According to Donald Folsom and Reiner Bonde the skin-spot disease (Oospora pustulans) was more common than usual this spring (1950) on potatoes stored in Maine. (PDR 34: 209)

Phytophthora infestans, late blight. J. R. Wallin, in the north-central region, reported that during the 1950 growing season, eight hygrothermographs were distributed among five potato fields, one tomato field and two inoculated plots. The results indicated that hygrothermographs placed in the field yielded rather accurate information on the temperature-humidity conditions associated with the cyclic development of P. infestans in the field and that they can be successfully used as a basis for forecasting late-blight development. (Phytopath. 41: 38). Harold T. Cook and J. M. Lutz reported data indicating that late blight tuber rot is not likely to be an important storage trouble when blight occurring early is followed by dry weather during the latter part of the growing season and at harvest time. (PDR 34: 15). In the final summary of the plant disease warning service in 1950 (PDR Suppl. 197) Miller and O'Brien pointed out that late blight did not cause as much economic loss on potato as it did on tomato, although it was prevalent in many areas (map p. 564). It was distributed throughout the Atlantic Coast seaboard States and four provinces in Canada. Sources of inoculum included diseased seed potatoes, cull piles, wind-blown spores from more southerly regions, and infected southern-grown tomato plants. Estimated reduction in yield, for the most part did not exceed 10 percent, except in Pennsylvania where reduction in yield amounted to 100 percent in affected fields but averaged 9 percent for the State. Cool-wet weather for extended periods of time during the growing period was ideal for late blight. Fungicides used for potato late blight control included Dithane D-14, nabam and many others (page 568).

Streptomyces scabies, scab. Busch and Gilpatrick described a technique for obtaining developing potato tubers in a relatively short time for inoculation with S. scabies. (PDR 34: 256)

Curly top (virus). R. D. Watson and T. E. Randall reported reaction of several wild seedling potatoes to the curly top virus. (PDR 35: 231)

Rugose mosaic (virus) was reported by M. C. Richards on potato test plots in New Hampshire. On July 1, 1950, 60 percent of the Mohawk and 95 percent of the B 76-43 plants showed infection. A trace only was found in other varieties. (PDR 34: 322)

SOLANUM MELONGENA. EGGPLANT: Verticillium albo-atrum, wilt, has been found in muck and sand land plantings of eggplants in Palm Beach and Martin Counties, Florida, according to Stoner and Hogan. (PDR 34: 213)

TARAXACUM OFFICINALE. DANDELION: D. M. McLean reported Sclerotinia sclerotiorum stem rot, and Ramularia taraxaci, leaf spot, on dandelion grown for seed in Skagit County, Washington. The prevalence of the disease on dandelion only adds to the hosts perpetuating the organism in this concentrated seed-producing area. (PDR 35: 162)

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